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ABSTRACT

A team of preservice and inservice teachers, an administrator, and a university professor planned and implemented a collaborative action research study in a suburban middle school that was part of a Professional Development School. This study documented the growth of the group as a professional learning community. Data collection involved pre- and posttest surveys and examination of participants' ongoing reflections and personal stories. Results indicated that the group made notable advances in the development of dialogic skills, a shared understanding of how teachers must lead a life of the mind, and realization of how to create a context that supported change. Preservice teachers had been used to more discussion than dialogue, and the idea of everyone listening to each other and suspending judgment throughout came as a surprise to them. Frequently teachers, particularly novices, became bogged down by the day-to-day minutia rather than viewing their profession through the lens of their intellect. The study helped preservice teacher develop their intellectual capabilities. It also helped participants at all levels become aware of how to create a context that supported change. (Contains 28 references.) (SM)

The Growth of a Professional Learning Community through Collaborative Action Research

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Abstract

A team of nine members (six preservice teachers, one inservice teacher, one administrator, and one university professor) planned and implemented a collaborative action research study in a suburban middle school that is a professional development school (PDS). Through the course of this study the growth of the group as a professional learning community was documented. Data is quantitative, including two instruments administered pre-and post- to the study and qualitative, including ongoing reflections and summative personal stories. One instrument is derived from the learning community work of Hord. The other instrument is derived from the National Council for the Accreditation of Teacher Education (NCATE) Professional Development School Learning Community Standard. The findings are that the dynamics of collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision shaped the progression of the group and that the perception of the growth of the learning community changed depending upon constituent.

Introduction

Collaborative action research (CAR) is experiencing an increase in use, particularly when used as a tool to guide the development of preservice teachers. The members of the CAR team are a professional learning community. Study of the development of this professional learning community is important to ensure its successful creation and efficient implementation. In a typical scenario, the collaborators in such a project include a preservice teacher, a cooperating teacher, and a university professor. In this study, the participants included a group of preservice teachers that represent the schools of education of two major universities, an inservice teacher who was not a cooperating teacher for any of the preservice teachers, a school district assistant superintendent, and a university professor. The university professor is responsible for field experiences at one of the universities, though at the time of this study he did not actually supervise field experiences. In this paper, the inservice teacher, assistant superintendent, and university professor will often be referred to as experienced educators, while the preservice teachers will be referred to as novice educators. Over a seven-month period, these individuals collaboratively planned and implemented an action research study at a suburban middle-level PDS. Throughout this time, the participants composed written reflections. They also completed pre- and post-tests designed to explore the growth of the group as a professional learning community. Last, each participant wrote a personal story describing their growth in terms of collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision. Pedagogical goals of this study included

exposing the preservice teachers to action research and modeling for the preservice teachers how to integrate inquiry into teaching as an approach to the profession. This study promotes the idea that teachers are learners too, with the content for educators being the profession of teaching. (Acheson & Gall, 1998).

Theoretical Assumptions

The theory undergirding this study spans the school reform, staff development, collaboration, and learning community fields. As Fullan says (1993, p. 46), "You cannot have students as continuous learners and effective collaborators, without teachers having the same characteristics." Therefore, a goal for the participants in this study is to develop the characteristics of continuous learning and effective collaboration in the novice teachers as well as in the experienced educators. Field-based experience is a natural link between theory and practice, therefore another goal was to have this CAR experience demonstrate for preservice teachers how the art of teaching itself is daily a link between theory and practice. In the words of Zimpher (2002), "every teacher is a theoretician; a teacher exerts thousands of theories a day in the classroom. . . . to say, 'but will it work in practice' can as readily be replaced with, 'but will it work in theory'". The development of the realization that there are no "quick fixes or 'microwave-type' recipes in teaching and research" (Zygouris-Coe, 2000) is another goal. The participants in this study were encouraged to embrace the idea of Valli (1999), that defines praxis as "the notion that knowledge should be used for purposeful action and that theory and practice are not separate but tightly interwoven human activities." Throughout the course of the study,

participants integrated theory with practice and reflection with action as part of an ongoing cycle meant to spiral progressively. A long-term goal for the participants is for this type of inquiry to (Pajak, 1999, p. 203), "drive learning for both students and teachers in pre K-12 schools," so that the schools actually become transformed into centers of inquiry.

Traditional structure of CAR projects has the higher education faculty setting up a design and then analyzing and interpreting data while the teachers merely provide the context. To nurture research skills in preservice teachers, the preservice teachers in collaboration with the inservice teacher, administrator, and university professor designed this study. This is to set an expectation for teacher-as-learner. According to Fullan, Bennett, and Rolheiser-Bennet (1990, p. 15), "four key aspects of teacher-as-learner are technical repertoire, reflective practice, research, and collaboration. . . . Rarely have all four received attention in the same setting." All four did receive attention in this study. A goal in the study was to attend to all four aspects. Reasons supportive for teacher-as-learner include (Senge, 1990) that individuals with these skills see the present as "an ally, not an enemy." These individuals are inquisitive and are able to grow with forces of change rather than defy them. Through accepting a role in the change process, teacher leadership is manifested (Lecos, M. A., Cassella, C., Evans, C., Leahy, C., Liess, E., & Lucas, T., 2000). An aftereffect of reflective dialogue between members of the CAR community is the emergence of commonality and divergence in viewpoint, which then further refines itself as deeper insight and clarity in thought (Senge, 1990).

From a staff development perspective, a program should undergo continual improvement through time as the participants learn and evolve through the process. Inquiry is considered to be the essence of staff development (Joyce & Showers, 1998). For effective completion of such a project; norms that are essential include (Joyce & Showers, 1998, p. 170), "norms that support the sharing of decisions, norms that accept strong and active leadership, norms against alienation and toward self-worth, and norms of the high purpose of education." Norms supportive of shared decision-making were developed through sitting around a table when meeting, through establishing an accepting atmosphere, and through modeling active listening. Norms that accept strong and active leadership were probably least attended to, as a goal for the group was to explore the notion of dynamic leadership. Norms against alienation and toward self-worth were established by conducting a series of icebreakers and encouraging a sense of purpose among team members and by stressing the value in what we were doing. Norms of the high purpose of education were modeled by the experienced educators through their approach to their work on a daily basis.

Also according to Joyce & Showers (1998, p. 7), characteristics of successful staff development programs include, "all have had specific student-learning goals in mind, have employed procedures tailored to their goals and backed by rationales grounded in research, have measured learning outcomes on a formative and summative basis, and have employed substantial amounts of staff development in recognition that the initiative involved teacher and student

learning of new procedures." These were addressed via the action research study itself– it employed best practices which evolved through discussion. Support for novice and experienced teachers came both from within and without the CAR team.

The staff development effort in this study required collaboration. Strong collaborations are carefully planned rather than taking place by accident (Watson & Fullan, 1992). The culture aspired to by this collaboration had a goal of being knowledge-centered in addition to being teacher-centered. The establishment of knowledge sharing practices is considered a path toward developing a collaborative culture in addition to being a product of it (Fullan, 2001). Trust, respect, open communication, and parity were sought after as collaboration without these is exploitation (Dickens, 2000). As Brogan (1999, p. 1) has noted, "Collaboration works best when there are caring relationships among colleagues from different workplace cultures." Research conducted by Hord (1997) has uncovered six dimensions to collaboration, including beginning processes, communication, resources and ownership, requirements and characteristics, leadership and control, and rewards. This study's very beginning process included sharing, through one's personal story, how each individual was led to this group. Communication was established through meetings, email, an online course site, and telephone calls. Needed resources were purchased and ownership was shared through the inclusion of all participants in decision-making. Leadership and control were shared, however the authors assumed most responsibilities by virtue of being the originators of the project.

Nonetheless, novice teachers were respected and their thinking was valued. Rewards have mainly been intrinsic, however the novice teachers will have opportunities to present on the study at professional conferences.

Sergiovanni is one of the premier community theorists. His definition of community is (1994, p. xvi), "collections of individuals who are bonded together by natural will and who are together binded to a set of shared ideas and ideals. An important corollary to this definition is that communities are defined by their centers rather than by individuals. The centers of community are (Sergiovanni, 1992, p. 47), "repositories of values, sentiments and beliefs that provide the needed cement for bonding people together in a common cause." The community sought after and explored in this study is further delineated as a learning community. According to Cibulka and Nakayama, who compiled a literature review for the National Partnership for Excellence and Accountability in Teaching (NPEAT, 2001, p. 4), a learning community is "a group of educators committed to working together collaboratively as learners to improve achievement for all students in a school. . . . one that consciously managed learning processes through an inquiry-driven orientation among all its members." The final delineation to the term learning community is the word professional. The idea of professionalism implies practice informed by knowledge in an ethical and research-based manner (Darling-Hammond, 1994). As noted by Fullan (1992, p. 90), a culture that is professional displays, "openness to new ideas, the giving and the receiving of help, collegiality focused on instructional improvement." Additionally, a professional's preparation is characterized by

advanced training and is ongoing throughout the individual's career so that the person is always aware of the current state of the field (DuFour & Eakin, 2000, p. xi). Taken together, the above combine to define the term professional learning community (PLC). A solid decade of research has been conducted on organizations labeled as PLCs. The act of meeting consistently in order to reflect and inquire on practice is considered fundamental to a PLC (Hall & Hord, 2001). After such meetings, action meant to improve student learning is taken on what is discovered. Traditional school culture and leadership are not conducive to the development of a PLC. What is needed, as noted by Cibulka and Nagayama (2001, p. 27), is that "incentives and opportunities for collaboration in building knowledge must increase, a climate that favors continuous school improvement must be fostered, transformational leadership by [the school's principal] is needed." Research by Hord (1997) at the Southwest Educational Development Laboratory has identified five dimensions of PLCs to be shared values and vision, collective learning and application, supportive and shared leadership, supportive conditions, and shared personal practice.

In practice, participants in PLCs (Morissey, 2000, p. 3), "look deeply into the teaching and learning process and learn how to become more effective in their work with students." Through growing in a PLC, adult learners model for students what it means to be a learner (Cibulka & Nakayama, 2001). As noted by O'Neil (1995, p. 23) in a conversation with Senge, in learning organizations individuals believe in their ability to make a difference. In doing this, the participants are not working toward conformity; they are rather working toward a

shared vision. Levine (1997, p. 2) has noted that, "teachers' learning needs to be contextualized if teachers are to be oriented to continuous learning in practice, teachers' learning needs to be collegial to generate more knowledge and to produce comfort with public practice and habits of conferral, and teachers' learning needs to be problem-based in order to develop a problem-solving orientation toward practice." This description comes full circle with the ideas of DuFour & Eakin (2000, p. 83) who share how teachers in schools that function as PLCs, "are guided by a clear, commonly held, shared purpose for student learning, feel a sense of collective responsibility for student learning, and collaborate with one another to promote student learning."

The literature describes research that is still needed in the field of staff development that can be addressed in part by this study. Specifically, it states a need for research studies that explore how to develop collegiality and how to facilitate all types of action research (Joyce & Showers, 1998).

Problem and Participants

The problem addressed by this study is the facilitation and development of the professional learning community modeled by a group of professionals engaged in a CAR project. The participants include six preservice teachers, one inservice teacher, one administrator, and one university professor. The six preservice teachers represent variety in university (they represent two major universities in the region), degree level (bachelors and masters degree candidates), certification area (elementary, general science, social studies, and English), and age (ranging from 21 years old to a mother of students in the PDS

in which the study was conducted). Prior to the study, three of the preservice teachers (interns from one of the universities) knew each other for a couple of months through being enrolled in common graduate courses. Also prior to the study, the inservice teacher had instructed the undergraduate student in a methods course. Last, the inservice teacher, administrator, and university professor knew each other prior to bringing this group together.

Purpose and Methodology

The purpose of this study is to explore the development of a PLC in a collaborative action research study. Through exposure to such learning, we hoped to awaken an inquiry approach to teaching in practice in the preservice teachers. We also hoped to demonstrate the commitment of seasoned education professionals to furthering this disposition in the preservice teachers.

The methodology for this study included completion of instruments and analysis of reflections. The day of the first meeting of the participants, two instruments were completed as a group, a learning community instrument and a professional learning community instrument. The PLC instrument consists of twenty-five questions each representing a cell in a five-by-five matrix with the five PLC dimensions heading rows and columns. The LC instrument consists of indicators developed by the National Council for the Accreditation of Teacher Education (NCATE) in their Professional Development School (PDS) Standards project, where the rubric for the learning community standard was converted to a series of sixteen questions. Following procedure followed by field test sites for the NCATE PDS Standards project, when completed as a pre-test these

instruments were completed collaboratively by the group through dialogue and discussion. A change was made during the post-test segment of the study, when the PLC instrument was completed individually in an attempt to uncover tendencies in distinction between preservice and experienced professionals.

Reflection was used as a formative source of data collection. Participants were asked to post reflections after each group meeting. A final source of data was collected after the completion of the CAR study, when each participant was asked to write a personal story. The personal story format employed reflection on the dynamics of collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision. These six dynamics stemmed from a synthesis of a review of the professional development school, learning community, school reform, and staff development literature (Balach, 2003; Balach & Szymanski, 2002).

These procedures were developed with five of NPEAT's characteristics of effective professional development in mind. The first idea attended to (NPEAT, 1999, p. 3) is that, "professional development should involve teachers in the identification of what they need to learn and in the development of the learning experiences in which they will be involved." In this PLC, rather than telling the preservice teachers the content and structure of the action research study, the group designed the process through dialogue. This process was disconcerting to the preservice teachers, who were accustomed to being told what to do and when to do it. Through disequilibrium and, a degree of mental anguish, the preservice teachers' comfort with open inquiry advanced. The action research study developed through this method looked at the relationship between teaching

with technology and student retention while addressing learning style. Thirty 8th grade students were instructed about the five senses with the World Wide Web integrated into the instruction and thirty 8th grade students were instructed on identical objectives without the use of the World Wide Web. The participants co-taught in four teaching teams. Each teaching team collaboratively planned their instruction, typically during times outside of whole group meetings. Lesson ideas were presented to the group as a whole. At this point, through dialogue, each instructional lesson was reflected upon with the goal of enhancing pedagogy. The second idea attended to is that (NPEAT, 1999, p. 5), "professional development should be primarily school-based and built into the day-to-day work of teaching." This CAR study took place in a middle school setting. Planning sessions occurred during the school day, and the action research was conducted during a half-day's worth of teaching time. The co-planning and co-teaching employed provided an unintended additional "level" to the PLC. The third NPEAT design principle integrated into this study is that (1999, p. 6), "professional development should be organized around collaborative problem solving." The learning that took place through the course of this study always involved an aspect of collaboration to enable successful surmounting of obstacles. The fourth NPEAT design principle relevant to this study is that (1999, p. 6), "professional development should be continuous and ongoing, involving follow-up and support for further learning-- including support from sources external to the school that can provide necessary resources and new perspective." In this study, meetings were held on an ongoing, as-needed basis.

Funding (from a Preparing Tomorrows' Teachers for Technology program grant) was secured to provide resources such as substitute coverage, reading materials, and supplies. As noted by Joyce & Showers (1998, p. 140), collegiality will only develop when, "meaningful and challenging reasons for collaborative work, such as efforts to improve curriculum and instruction for increased student learning," exist. The middle school employed in this study is a member of a digital school district, where students each have school-issued laptops. Predisposition for learning about teaching with technology was thus a strong, relevant impetus for all participants in the study. During each planning meeting, time was allotted for discussion of concerns, both those directly related to the CAR study and those external to the study but in the forefronts of the preservice teachers' minds.

As leaders of the study, the authors strived to guide through shared vision and values rather than through establishing rules, regulations, and procedures. While agendas were set for meetings, input from all was solicited and open time for discussion was allotted.

The five stages of professional development noted by Darling-Hammond, (1994, p. 46), "define, explore, experiment, reflect, and share," existed through the course of this study. During each meeting this process progressed through each of the five stages, with a spiraling progression of the cycle through the course of the seven-month period.

Analysis of Data

Pre- and post-testing of learning community indicators provided one source of data while both ongoing and summative reflections provided another source of data. The LC instrument was completed collaboratively in both pre- and post-test situations, while the PLC instrument was completed collaboratively as a pre-test but individually as a post-test. This change was made to determine if distinctions existed as a function of constituent.

The questions of the learning community instrument and pre- and post-responses are listed in Table 1 below. Numerical ratings are based on the following ordinal scale, where LC is the construct explored in Table 1 and PLC is the construct explored in Table 2:

1: **Beginning Level:** Even at its earliest stages, the participants in the learning community (LC) are committed to the key concepts of LCs.

2: **Developing Level**: Participants are engaged in LC philosophy/work in many ways. They begin to see each other creating new ways of strengthening the LC and to see members outside the immediate collaboration adding to the goals of the LC.

3: **At Standard Level**: Participants have integrated LC philosophy/work into their way of functioning. Participants work together effectively and have made changes in personal policy and practice that reflect what has been learned through LC work. Members outside the immediate LC are adding to the goals of the LC and expanding its sphere of influence.

4: **Leading Level:** Advanced LC work is sustaining and generative. The LC participants are extending their notion of community beyond the members of the original collaboration. The LC has reached its potential for leveraging change outside its boundaries and has an impact in the broader education community.

Table 1: Responses to Learning Community Instrument

Question	Pre-test Response	Post-test Response	Change in Response
1) An environment is provided that simultaneously supports the learning of all participants.	1	2	1
2) All participants are incorporated equally into the LC.	1	2	1
3) All participants share responsibility with all other participants for the learning of students.	1	3	2
4) Participants serve as mentors, co-teachers, and colleagues in study groups, seminars, committees, and other collegial activities.	1	1	0
5) Participants share expertise, skills, and knowledge to support LC improvement through direct and active participation in the LC.	1	3	2
6) Inquiry in its many forms is at the center of the community's vision.	1	2	1
7) An inquiry orientation weaves together learning, accountability, and participant development.	1	3	2
8) Inquiry is used at the individual and community level to inform decisions about which approaches to teaching and learning work best.	1	2	1
9) LC participants have a vision that infuses the LC.	1	2	1
10) The LC vision is reviewed and shared based on knowledge gained as a result of the LC.	1	1	0
11) LC participants envision the LC as an instrument for change.	1	2	1
12) LC participants use knowledge generated as part of the LC as leverage for change.	1	2	1
13) LC participants have changed their instructional strategies, curriculum emphases, or research as a result of their LC activities.	1	2	1
14) By integrating their expertise and knowledge of practice, LC partners develop new approaches for examining and improving the practices of individuals and the policies of organizations.	1	2	1
15) The LC extends beyond the immediate participants.	1	1	0
16) LC participants share, learn from, and address practices and cultural differences,	1	2	1

The data in Table 1 show that while members of the learning community experienced growth, areas such as the shared vision and extending the learning community did not experience change. The creation of the vision for the group took place near the halfway point in terms of time. In the future, the creation of a

shared vision must take place at the very beginning. After its creation, this vision must be regularly revisited. Comments from the group included a desire to share this vision with the students in the classroom and to spend more time addressing the vision on an ongoing basis. Time constraints and lack of focused planning to share about the study as we were engaged in it resulted in minimal extension of the ideas of the CAR group to outside audiences during the course of the project. However, after the project's completion, several professional presentations on our learning were shared. We learned from this, as it is important to share learning with colleagues throughout the course of the CAR.

Data from the PLC instrument is displayed in Table 2. Columns for comparison include pre-test response, whole-group post-test response, average experienced educator (EE) post-test response, average preservice teacher (PT) post-test response, and change (Avg. Post-test Response minus pre-test response).

Table 2

Professional Learning Community Instrument and Data

Question	Pre-test Response	Avg. Post-test Response	Avt. EE post-test Response	Avt. PT post-test	Change
1) Participants at all levels participate democratically sharing power, authority, and decision-making.	2	2.65	2.3	3.0	.65
2) Together, the participants decide on the values and vision of the PLC.	1	2.3	2.0	2.6	1.3
3) The participants create the context in which they can focus their learning and support its implementation.	2	2.7	2.7	2.8	0.7
4) Together, the participants access resources, develop structures, and nurture people capacities supportive of a PLC.	2	2.7	2.7	2.8	1.3
5) Together, the participants develop ways to share practices to increase individual and organizational capacity.	1	2.33	2.0	2.6	1.2
6) The shared values and vision guide the participants in making individual and collective decisions on substantive issues.	1	2.2	2.0	2.4	1.3
7) Participants share visions for improvement that have an undeviating focus on improving student learning, and are consistently referenced for the participant's work.	1	2.3	2.0	2.6	0.5
8) Participants value coming together to learn ways to improve student learning consistent with the vision.	2	2.5	2.3	2.6	1.3
9) Shared values and vision guide the participants in developing physical and organizational structures and people capacities that support the PLC.	1	2.3	2.3	2.2	1.3
10) The participants value the process of peer review and feedback to improve classroom practice consistent with the vision.	2	2.2	2.0	2.4	0.2
11) All participants use their learning to inform decisions and develop actions on substantive issues.	2	2.5	2.3	2.6	0.5
12) Together, all participants engage in learning that reflects their values and contributes to realizing the vision of the PLC.	1	2.3	2.3	2.2	1.3
13) Participant's collective learning and application of the learning (taking action) create high intellectual learning tasks and solutions to address student needs.	2	2.4	2.0	2.8	0.4
14) Participant's collective learning guide members in identifying and developing organizational structures and people capacities that support the PLC.	1	2.3	2.0	2.6	1.3
15) Participant's collective learning provides a purpose and focus for peer review and feedback to improve classroom practice.	1	2.1	1.7	2.6	1.1
16) Structures and people capacities enable the participants to participate democratically in making decisions about substantive issues.	2	2.8	2.3	3.2	0.8
17) Structures and people capacities reinforce the participant's undeviating focus on student learning.	2	2.4	2.0	2.8	0.4
18) Structures and people capacities provide opportunities for all participants to learn ways to improve their collective practice.	2	2.4	2.7	2.2	0.4
19) School conditions and capacities support the participant's arrangement as a PLC.	2	2.5	2.3	2.6	0.5
20) Structures and people capacities enable the participants to review each other's classroom practice and give feedback to improve student learning.	1	1.5	1.7	1.4	0.5
21) Peer review and feedback on instructional practices increases individual and organizational capacity for whole-community decision-making.	1	1.7	1.7	1.8	0.7
22) Peer review and feedback on instructional practices reinforce the community's shared values and vision in the classroom.	1	1.8	1.7	2.0	0.8
23) Learning emerging from peer review and feedback inform the participants on areas for collective study to improve classroom practice.	1	1.7	1.7	1.8	0.7
24) Peer review and feedback strengthen professional relationships and reinforce the use of organizational structures needed for sharing practice.	1	2.0	1.7	2.4	1.0
25) Peers review and give feedback on instructional practice in order to increase individual and organizational capacity.	1	2.1	2.0	2.2	1.1

Data in Table 2 show reported change greater for preservice teachers than for experienced educators with the exception of three situations. The first is question 12, together, all participants engage in learning that reflects their values and contributes to realizing the vision of the PLC; the second is question 18, structures and people capacities provide opportunities for all participants to learn ways to improve their collective practice; the third is question 20, structures and people capacities enable the participants to review each other's classroom practice and give feedback to improve student learning. The concepts represented by each of these questions must thus be more clearly delineated, for the preservice teachers, as they are being addressed. In general, structures and people capacities would be more familiar to experienced educators than to preservice teachers. The greatest growth was exhibited by questions 5, 7, 9, and 14. These questions dealt with developing capacity and sharing vision. While it would be nice to say that this is entirely attributable to the fact that the group grew the most in these areas due to the collaborative nature of the interactions, in part this growth may be attributable to the fact that the preservice teachers were new to the meanings of some of the terms and thus rated these questions low in the pretest.

In completing their personal story, each participant reflected on the six dynamics of learning communities (collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision) as they applied to both their role in the learning community and to their personal growth. Each of the six dynamics will be addressed below.

Collaboration

A goal of this learning community was to develop collaboration as distinct from cooperation. As Diez & Blackwell (2002) have noted, the motivation of the participants is a significant factor in the success of the collaboration. Each participant in this LC chose to be a part of the group. Depth of comprehension of what is involved in developing a strong collaboration can be seen in the words of Brenda, "Candid dialogue between the team members fostered new growth and knowledge. Novice and expert teachers came together to focus on innovative methods for teaching and learning." Betty adds, "We discussed in a joint and cooperative manner what we wanted to accomplish. . . . We were a team from the start that never strayed from working together to reach our goals." The point of view of the experienced educators added perspective to this. As Claudia wrote, "I felt that at the onset people were comfortable sharing their thoughts and that all participants felt that their ideas were respected. While this feeling did not completely dissipate, ..., it waxed and waned through the course of the months of the project." In George's words, "I think we learned that collaboration takes some effort. It does not occur just because we want it to happen....Collaboration is built upon a willingness to collaborate, the ability to respect each other, our various opinions, and the ability to trust each other by recognizing that each individual is there for the common good as well s their personal well being."

Inquiry

From Balach & Szymanski (2002), the definition of inquiry used in this study is, "continuous gaining of knowledge by a community of learners who

model a culture of questioning practices and who understand and appreciate the work of others, explore together to improve the academic environment, identify related issues and problems, share the body of information among partners, have consensus between principal partners about the need for data and support, and view everyone as a learner and everyone as a teacher." Joe, one of the experienced educators, wrote in his personal story, "Of course, I believe that is what inquiry is all about-- a constant struggle. We probe, we question ourselves and others, we doubt, we make attempts, we start over, but we eventually come to an understanding, a vision, and we learn. We then reflect on what was learned, begin to ask questions, and then it starts all over again!"

Leadership

In a collaborative group composed of preservice and experienced teachers, the notion of shared leadership presents inherent challenges. A realization was that shared leadership manifests itself differently depending upon the perspective of the participant. Thus, in a sense, a continuum of leadership exists. Traditionally, novice teachers have not viewed themselves as leaders; this should change. As Claudia wrote, "I think that it is important for individuals who will become new teachers to view the profession as one requiring characteristics of leadership. Teachers need to approach their job as carrying with it responsibility for what takes place in other classrooms in their building and responsibility for their own growth and development." Participation in studies such as this one plants the seed of leadership in the mind of the novice teacher.

Parity

The force of parity is present when members of the LC exhibit respect for each other as equal contributors. As was the case with leadership, the application of parity to a collaborative group consisting of individuals with tremendous variety in background presents a seeming conundrum. However, through living through months of grappling with how this comes into play, several realizations surfaced. Betty, a preservice teacher, wrote how, from her perspective, parity was attained because, "We felt comfortable agreeing and disagreeing with one another for the sake of learning and improving our teaching skills. Age and experience did not interfere with our desire and ability to grow as educators." From the point of view of George, an experienced educator, "A true learning community demands parity. . . . Setting each other at ease will take time. It does not occur because we say the words that we are all equal, with no rank. . . . Respect for each other and their opinions and ideas must be demonstrated within the group."

Reflective dialogue

The force of reflective dialogue was foundational for this group. It permeated and impinged itself upon all of the other forces. Sonia wrote that, "Reflection seems to be the driving factor between quality teaching and learning. Without the dialogue between our learning community and subgroups, I felt that this research would not of [sic] been successful." Joe, an experienced educator, wrote how, "Reflection seemed to be the norm for our group. I routinely saw that in my particular teaching situation. . . . Everyone had a lot to offer which caused

all of us to genuinely reflect on teaching and learning." However, most of the reflection occurred during meetings; once we were out of each other's sight, much of the reflection ceased. As George noted, "Now that we recognize the dynamic and have defined it, an explanation of why it is required and the value it brings to the members should be explained and discussed at the very beginning of an activity."

Shared vision

Shared vision is a force that researchers note as often being neglected in spite of occupying a spot of critical importance (DuFour & Eakin, 1999; Hord, 1997). Our group crafted a shared vision approximately halfway through the project. The shared vision we created is:

> We will establish a learning community that supports research, discussion and reflection to successfully implement the P3LC Project. We will create a new model of collaboration involving students, teachers, administrators, interns, student teachers and university members where individuals will be coteaching lessons and building on each other's enthusiasm for learning and growing. We will work collaboratively, without rank, and learn from each other.
>
> We will see computers integrated into instruction and they will feel as natural as students using a pencil and paper. There will be a sense of excitement in the room. We will see movement, energy, and thinking. We will see minds that are challenged. We will hear productive noise with high levels of enthusiasm and questions being asked by students and by teachers. We will hear people grappling with ideas, and everyone sharing ideas. We will feel the collaboration, togetherness and work toward common goals. We will see students who want to come to school, excited about learning and sensing a special enthusiasm among everyone involved. The excitement in the room will be like the anticipation of opening a gift that you already know you are going to like. We will see students actively involved in the lesson, using hands-on experimentation, manipulating materials and technology. We will see laughter, "a-ha" moments and movement throughout the

> lessons. Students will be out of their seats and doing their thing - labs, journals, or reading groups. We will hear lots of open discussions. We will be able to taste the inquisitiveness. Teachers of various skills and disciplines will be coteaching the same lesson. We will see teachers "playing off each other", collaborating to focus on the learning styles of their students and engaging them in learning. We will hear teachers and students discussing their learning with each other in an enthusiastic tone. Teachers will feel like they have someone with whom to share the workload.
>
> We will hear people referring to this vision and see it growing and changing on an ongoing basis. We will contribute to the improvement of teaching and learning and influence others to conduct similar projects.

This vision never quite developed a life of its own. While, in this instance, this was a loss, in terms of setting a stage of awareness for the participants of the importance and pre-eminent role that shared vision must play, this omission provided a memorable learning experience. Sandy, a preservice teacher wrote the following about the visioning process: "I felt like it was a cool thing to do and be part of but I definitely did not follow through and in retrospect wish I had. . . . I think we all have good intentions and all want the best for our students yet I know for myself that I need more experience coming up with and following collaborative vision statements before I feel comfortable using them frequently." Claudia writes, "I would improve on this by addressing the concept of a shared vision from day one. . . . I am glad that I have realized this so early. . . . now that I am aware of it I will augment its importance and salience from early on." Though the shared vision did not gain momentum, it did have an impact. Joe shared how, "Verbalizing our thoughts throughout was a significant part of gaining a shared vision for this project." George, who brings a wealth of experience with

vision writing and is a national expert in strategic planning, concurs in saying that, "We had a great amount of excellent ideas and were well on our way toward creating an influential vision statement that defined collaboration, inquiry, leadership and parity. I believe the members wanted this activity to redefine teaching and develop into a new standard to which all teachers should aspire."

Discussion

Many forward strides were made by all of the participants in this CAR study. Notable advances include development of dialogic skills, a shared understanding of how teachers must lead a life of the mind, and realization of how to create a context supportive of change. Each of these developments will be addressed below.

The preservice teacher participants in this study entered the endeavor accustomed more to discussion than to dialogue. The idea of everyone listening to each other and suspending judgment throughout came as a surprise to them. The dialogues that took place during our meetings were conversations following along the thinking of Freisen (1993), in that the literal definition of conversation is "to dwell with," and that it suggests (p. 37) "reciprocity rather than expert prescription." Another trend of our conversations was that they would follow along different paths than may have originally been intended. As Freisen says, (1993, p. 33), "A genuine conversation is never the one that we wanted to conduct." The collaboration action research group did not constrict its conversations.

Frequently teachers, and in particular novice teachers, become bogged down by day-to-day minutia rather than viewing their profession through the lens of their intellect. Through the course of this study, the preservice teachers developed their intellectual capacities. While an obvious means by which this took place were the reflections that each completed, a deeper sense of this aspect of the teaching profession was able to be developed in these individuals through having the opportunity to sit for two or three hours and discuss teaching. This typically does not take place because teachers' schedules do not contain two to three hour stretches within which pedagogy can be discussed.

A realization of how to create a context supportive of change took place at different levels for the different participants in this study. The preservice teachers become aware of the fact that teachers should play a role in school reform beyond the four walls of their classroom. The assistant superintendent experienced working with a group of individuals in a novel context; this experience left him amazed and changed. The university professor had the opportunity to work with preservice teachers in a K-12 setting and to thus put into practice what he had been reading and thinking about for the undergraduate education curriculum. The inservice teacher had the chance to put into practice ideas that she found exciting but that she had never had the chance to experience.

Conclusion

In conclusion, a CAR group is a professional learning community. Therefore, the dynamics of collaboration, inquiry, leadership, parity, reflective

dialogue, and shared vision shape the progression of the group. While this is a fluid process, initial conditions can be established that predispose the development of the group into a strong learning community. Through the process of enacting and studying such a project, the authors have begun building a foundation that relates theory with practice for the professional learning communities created through collaborative action research. Future study includes exploring the learning community construct in an action research study of a university graduate administration class, studying the growth of the learning communities created by constituent groups (for example, university faculty members and principals) as they conduct action research in a professional development school partnership, and investigating the political ramifications of learning communities.

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The Growth of a Professional Learning Community through Collaborative Action Research

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Abstract

A team of nine members (six preservice teachers, one inservice teacher, one administrator, and one university professor) planned and implemented a collaborative action research study in a suburban middle school that is a professional development school (PDS). Through the course of this study the growth of the group as a professional learning community was documented. Data is quantitative, including two instruments administered pre-and post- to the study and qualitative, including ongoing reflections and summative personal stories. One instrument is derived from the learning community work of Hord. The other instrument is derived from the National Council for the Accreditation of Teacher Education (NCATE) Professional Development School Learning Community Standard. The findings are that the dynamics of collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision shaped the progression of the group and that the perception of the growth of the learning community changed depending upon constituent.

Introduction

Collaborative action research (CAR) is experiencing an increase in use, particularly when used as a tool to guide the development of preservice teachers. The members of the CAR team are a professional learning community. Study of the development of this professional learning community is important to ensure its successful creation and efficient implementation. In a typical scenario, the collaborators in such a project include a preservice teacher, a cooperating teacher, and a university professor. In this study, the participants included a group of preservice teachers that represent the schools of education of two major universities, an inservice teacher who was not a cooperating teacher for any of the preservice teachers, a school district assistant superintendent, and a university professor. The university professor is responsible for field experiences at one of the universities, though at the time of this study he did not actually supervise field experiences. In this paper, the inservice teacher, assistant superintendent, and university professor will often be referred to as experienced educators, while the preservice teachers will be referred to as novice educators. Over a seven-month period, these individuals collaboratively planned and implemented an action research study at a suburban middle-level PDS. Throughout this time, the participants composed written reflections. They also completed pre- and post-tests designed to explore the growth of the group as a professional learning community. Last, each participant wrote a personal story describing their growth in terms of collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision. Pedagogical goals of this study included

exposing the preservice teachers to action research and modeling for the preservice teachers how to integrate inquiry into teaching as an approach to the profession. This study promotes the idea that teachers are learners too, with the content for educators being the profession of teaching. (Acheson & Gall, 1998).

Theoretical Assumptions

The theory undergirding this study spans the school reform, staff development, collaboration, and learning community fields. As Fullan says (1993, p. 46), "You cannot have students as continuous learners and effective collaborators, without teachers having the same characteristics." Therefore, a goal for the participants in this study is to develop the characteristics of continuous learning and effective collaboration in the novice teachers as well as in the experienced educators. Field-based experience is a natural link between theory and practice, therefore another goal was to have this CAR experience demonstrate for preservice teachers how the art of teaching itself is daily a link between theory and practice. In the words of Zimpher (2002), "every teacher is a theoretician; a teacher exerts thousands of theories a day in the classroom. . . . to say, 'but will it work in practice' can as readily be replaced with, 'but will it work in theory'". The development of the realization that there are no "quick fixes or 'microwave-type' recipes in teaching and research" (Zygouris-Coe, 2000) is another goal. The participants in this study were encouraged to embrace the idea of Valli (1999), that defines praxis as "the notion that knowledge should be used for purposeful action and that theory and practice are not separate but tightly interwoven human activities." Throughout the course of the study,

participants integrated theory with practice and reflection with action as part of an ongoing cycle meant to spiral progressively. A long-term goal for the participants is for this type of inquiry to (Pajak, 1999, p. 203), "drive learning for both students and teachers in pre K-12 schools," so that the schools actually become transformed into centers of inquiry.

Traditional structure of CAR projects has the higher education faculty setting up a design and then analyzing and interpreting data while the teachers merely provide the context. To nurture research skills in preservice teachers, the preservice teachers in collaboration with the inservice teacher, administrator, and university professor designed this study. This is to set an expectation for teacher-as-learner. According to Fullan, Bennett, and Rolheiser-Bennet (1990, p. 15), "four key aspects of teacher-as-learner are technical repertoire, reflective practice, research, and collaboration. . . . Rarely have all four received attention in the same setting." All four did receive attention in this study. A goal in the study was to attend to all four aspects. Reasons supportive for teacher-as-learner include (Senge, 1990) that individuals with these skills see the present as "an ally, not an enemy." These individuals are inquisitive and are able to grow with forces of change rather than defy them. Through accepting a role in the change process, teacher leadership is manifested (Lecos, M. A., Cassella, C., Evans, C., Leahy, C., Liess, E., & Lucas, T., 2000). An aftereffect of reflective dialogue between members of the CAR community is the emergence of commonality and divergence in viewpoint, which then further refines itself as deeper insight and clarity in thought (Senge, 1990).

From a staff development perspective, a program should undergo continual improvement through time as the participants learn and evolve through the process. Inquiry is considered to be the essence of staff development (Joyce & Showers, 1998). For effective completion of such a project, norms that are essential include (Joyce & Showers, 1998, p. 170), "norms that support the sharing of decisions, norms that accept strong and active leadership, norms against alienation and toward self-worth, and norms of the high purpose of education." Norms supportive of shared decision-making were developed through sitting around a table when meeting, through establishing an accepting atmosphere, and through modeling active listening. Norms that accept strong and active leadership were probably least attended to, as a goal for the group was to explore the notion of dynamic leadership. Norms against alienation and toward self-worth were established by conducting a series of icebreakers and encouraging a sense of purpose among team members and by stressing the value in what we were doing. Norms of the high purpose of education were modeled by the experienced educators through their approach to their work on a daily basis.

Also according to Joyce & Showers (1998, p. 7), characteristics of successful staff development programs include, "all have had specific student-learning goals in mind, have employed procedures tailored to their goals and backed by rationales grounded in research, have measured learning outcomes on a formative and summative basis, and have employed substantial amounts of staff development in recognition that the initiative involved teacher and student

learning of new procedures." These were addressed via the action research study itself-- it employed best practices which evolved through discussion. Support for novice and experienced teachers came both from within and without the CAR team.

The staff development effort in this study required collaboration. Strong collaborations are carefully planned rather than taking place by accident (Watson & Fullan, 1992). The culture aspired to by this collaboration had a goal of being knowledge-centered in addition to being teacher-centered. The establishment of knowledge sharing practices is considered a path toward developing a collaborative culture in addition to being a product of it (Fullan, 2001). Trust, respect, open communication, and parity were sought after as collaboration without these is exploitation (Dickens, 2000). As Brogan (1999, p. 1) has noted, "Collaboration works best when there are caring relationships among colleagues from different workplace cultures." Research conducted by Hord (1997) has uncovered six dimensions to collaboration, including beginning processes, communication, resources and ownership, requirements and characteristics, leadership and control, and rewards. This study's very beginning process included sharing, through one's personal story, how each individual was led to this group. Communication was established through meetings, email, an online course site, and telephone calls. Needed resources were purchased and ownership was shared through the inclusion of all participants in decision-making. Leadership and control were shared, however the authors assumed most responsibilities by virtue of being the originators of the project.

Nonetheless, novice teachers were respected and their thinking was valued. Rewards have mainly been intrinsic, however the novice teachers will have opportunities to present on the study at professional conferences.

Sergiovanni is one of the premier community theorists. His definition of community is (1994, p. xvi), "collections of individuals who are bonded together by natural will and who are together binded to a set of shared ideas and ideals. An important corollary to this definition is that communities are defined by their centers rather than by individuals. The centers of community are (Sergiovanni, 1992, p. 47), "repositories of values, sentiments and beliefs that provide the needed cement for bonding people together in a common cause." The community sought after and explored in this study is further delineated as a learning community. According to Cibulka and Nakayama, who compiled a literature review for the National Partnership for Excellence and Accountability in Teaching (NPEAT, 2001, p. 4), a learning community is "a group of educators committed to working together collaboratively as learners to improve achievement for all students in a school. . . . one that consciously managed learning processes through an inquiry-driven orientation among all its members." The final delineation to the term learning community is the word professional. The idea of professionalism implies practice informed by knowledge in an ethical and research-based manner (Darling-Hammond, 1994). As noted by Fullan (1992, p. 90), a culture that is professional displays, "openness to new ideas, the giving and the receiving of help, collegiality focused on instructional improvement." Additionally, a professional's preparation is characterized by

advanced training and is ongoing throughout the individual's career so that the person is always aware of the current state of the field (DuFour & Eakin, 2000, p. xi). Taken together, the above combine to define the term professional learning community (PLC). A solid decade of research has been conducted on organizations labeled as PLCs. The act of meeting consistently in order to reflect and inquire on practice is considered fundamental to a PLC (Hall & Hord, 2001). After such meetings, action meant to improve student learning is taken on what is discovered. Traditional school culture and leadership are not conducive to the development of a PLC. What is needed, as noted by Cibulka and Nagayama (2001, p. 27), is that "incentives and opportunities for collaboration in building knowledge must increase, a climate that favors continuous school improvement must be fostered, transformational leadership by [the school's principal] is needed." Research by Hord (1997) at the Southwest Educational Development Laboratory has identified five dimensions of PLCs to be shared values and vision, collective learning and application, supportive and shared leadership, supportive conditions, and shared personal practice.

In practice, participants in PLCs (Morissey, 2000, p. 3), "look deeply into the teaching and learning process and learn how to become more effective in their work with students." Through growing in a PLC, adult learners model for students what it means to be a learner (Cibulka & Nakayama, 2001). As noted by O'Neil (1995, p. 23) in a conversation with Senge, in learning organizations individuals believe in their ability to make a difference. In doing this, the participants are not working toward conformity; they are rather working toward a

shared vision. Levine (1997, p. 2) has noted that, "teachers' learning needs to be contextualized if teachers are to be oriented to continuous learning in practice, teachers' learning needs to be collegial to generate more knowledge and to produce comfort with public practice and habits of conferral, and teachers' learning needs to be problem-based in order to develop a problem-solving orientation toward practice." This description comes full circle with the ideas of DuFour & Eakin (2000, p. 83) who share how teachers in schools that function as PLCs, "are guided by a clear, commonly held, shared purpose for student learning, feel a sense of collective responsibility for student learning, and collaborate with one another to promote student learning."

The literature describes research that is still needed in the field of staff development that can be addressed in part by this study. Specifically, it states a need for research studies that explore how to develop collegiality and how to facilitate all types of action research (Joyce & Showers, 1998).

Problem and Participants

The problem addressed by this study is the facilitation and development of the professional learning community modeled by a group of professionals engaged in a CAR project. The participants include six preservice teachers, one inservice teacher, one administrator, and one university professor. The six preservice teachers represent variety in university (they represent two major universities in the region), degree level (bachelors and masters degree candidates), certification area (elementary, general science, social studies, and English), and age (ranging from 21 years old to a mother of students in the PDS

in which the study was conducted). Prior to the study, three of the preservice teachers (interns from one of the universities) knew each other for a couple of months through being enrolled in common graduate courses. Also prior to the study, the inservice teacher had instructed the undergraduate student in a methods course. Last, the inservice teacher, administrator, and university professor knew each other prior to bringing this group together.

Purpose and Methodology

The purpose of this study is to explore the development of a PLC in a collaborative action research study. Through exposure to such learning, we hoped to awaken an inquiry approach to teaching in practice in the preservice teachers. We also hoped to demonstrate the commitment of seasoned education professionals to furthering this disposition in the preservice teachers.

The methodology for this study included completion of instruments and analysis of reflections. The day of the first meeting of the participants, two instruments were completed as a group, a learning community instrument and a professional learning community instrument. The PLC instrument consists of twenty-five questions each representing a cell in a five-by-five matrix with the five PLC dimensions heading rows and columns. The LC instrument consists of indicators developed by the National Council for the Accreditation of Teacher Education (NCATE) in their Professional Development School (PDS) Standards project, where the rubric for the learning community standard was converted to a series of sixteen questions. Following procedure followed by field test sites for the NCATE PDS Standards project, when completed as a pre-test these

instruments were completed collaboratively by the group through dialogue and discussion. A change was made during the post-test segment of the study, when the PLC instrument was completed individually in an attempt to uncover tendencies in distinction between preservice and experienced professionals.

Reflection was used as a formative source of data collection. Participants were asked to post reflections after each group meeting. A final source of data was collected after the completion of the CAR study, when each participant was asked to write a personal story. The personal story format employed reflection on the dynamics of collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision. These six dynamics stemmed from a synthesis of a review of the professional development school, learning community, school reform, and staff development literature (Balach, 2003; Balach & Szymanski, 2002).

These procedures were developed with five of NPEAT's characteristics of effective professional development in mind. The first idea attended to (NPEAT, 1999, p. 3) is that, "professional development should involve teachers in the identification of what they need to learn and in the development of the learning experiences in which they will be involved." In this PLC, rather than telling the preservice teachers the content and structure of the action research study, the group designed the process through dialogue. This process was disconcerting to the preservice teachers, who were accustomed to being told what to do and when to do it. Through disequilibrium and, a degree of mental anguish, the preservice teachers' comfort with open inquiry advanced. The action research study developed through this method looked at the relationship between teaching

with technology and student retention while addressing learning style. Thirty 8th grade students were instructed about the five senses with the World Wide Web integrated into the instruction and thirty 8th grade students were instructed on identical objectives without the use of the World Wide Web. The participants co-taught in four teaching teams. Each teaching team collaboratively planned their instruction, typically during times outside of whole group meetings. Lesson ideas were presented to the group as a whole. At this point, through dialogue, each instructional lesson was reflected upon with the goal of enhancing pedagogy. The second idea attended to is that (NPEAT, 1999, p. 5), "professional development should be primarily school-based and built into the day-to-day work of teaching." This CAR study took place in a middle school setting. Planning sessions occurred during the school day, and the action research was conducted during a half-day's worth of teaching time. The co-planning and co-teaching employed provided an unintended additional "level" to the PLC. The third NPEAT design principle integrated into this study is that (1999, p. 6), "professional development should be organized around collaborative problem solving." The learning that took place through the course of this study always involved an aspect of collaboration to enable successful surmounting of obstacles. The fourth NPEAT design principle relevant to this study is that (1999, p. 6), "professional development should be continuous and ongoing, involving follow-up and support for further learning-- including support from sources external to the school that can provide necessary resources and new perspective." In this study, meetings were held on an ongoing, as-needed basis.

Funding (from a Preparing Tomorrows' Teachers for Technology program grant) was secured to provide resources such as substitute coverage, reading materials, and supplies. As noted by Joyce & Showers (1998, p. 140), collegiality will only develop when, "meaningful and challenging reasons for collaborative work, such as efforts to improve curriculum and instruction for increased student learning," exist. The middle school employed in this study is a member of a digital school district, where students each have school-issued laptops. Predisposition for learning about teaching with technology was thus a strong, relevant impetus for all participants in the study. During each planning meeting, time was allotted for discussion of concerns, both those directly related to the CAR study and those external to the study but in the forefronts of the preservice teachers' minds.

As leaders of the study, the authors strived to guide through shared vision and values rather than through establishing rules, regulations, and procedures. While agendas were set for meetings, input from all was solicited and open time for discussion was allotted.

The five stages of professional development noted by Darling-Hammond, (1994, p. 46), "define, explore, experiment, reflect, and share," existed through the course of this study. During each meeting this process progressed through each of the five stages, with a spiraling progression of the cycle through the course of the seven-month period.

Analysis of Data

Pre- and post-testing of learning community indicators provided one source of data while both ongoing and summative reflections provided another source of data. The LC instrument was completed collaboratively in both pre- and post-test situations, while the PLC instrument was completed collaboratively as a pre-test but individually as a post-test. This change was made to determine if distinctions existed as a function of constituent.

The questions of the learning community instrument and pre- and post-responses are listed in Table 1 below. Numerical ratings are based on the following ordinal scale, where LC is the construct explored in Table 1 and PLC is the construct explored in Table 2:

1: **Beginning Level:** Even at its earliest stages, the participants in the learning community (LC) are committed to the key concepts of LCs.

2: **Developing Level**:Participants are engaged in LC philosophy/work in many ways. They begin to see each other creating new ways of strengthening the LC and to see members outside the immediate collaboration adding to the goals of the LC.

3: **At Standard Level**:Participants have integrated LC philosophy/work into their way of functioning. Participants work together effectively and have made changes in personal policy and practice that reflect what has been learned through LC work. Members outside the immediate LC are adding to the goals of the LC and expanding its sphere of influence.

4: **Leading Level:** Advanced LC work is sustaining and generative. The LC participants are extending their notion of community beyond the members of the original collaboration. The LC has reached its potential for leveraging change outside its boundaries and has an impact in the broader education community.

Table 1: Responses to Learning Community Instrument

Question	Pre-test Response	Post-test Response	Change in Response
1) An environment is provided that simultaneously supports the learning of all participants.	1	2	1
2) All participants are incorporated equally into the LC.	1	2	1
3) All participants share responsibility with all other participants for the learning of students.	1	3	2
4) Participants serve as mentors, co-teachers, and colleagues in study groups, seminars, committees, and other collegial activities.	1	1	0
5) Participants share expertise, skills, and knowledge to support LC improvement through direct and active participation in the LC.	1	3	2
6) Inquiry in its many forms is at the center of the community's vision.	1	2	1
7) An inquiry orientation weaves together learning, accountability, and participant development.	1	3	2
8) Inquiry is used at the individual and community level to inform decisions about which approaches to teaching and learning work best.	1	2	1
9) LC participants have a vision that infuses the LC.	1	2	1
10) The LC vision is reviewed and shared based on knowledge gained as a result of the LC.	1	1	0
11) LC participants envision the LC as an instrument for change.	1	2	1
12) LC participants use knowledge generated as part of the LC as leverage for change.	1	2	1
13) LC participants have changed their instructional strategies, curriculum emphases, or research as a result of their LC activities.	1	2	1
14) By integrating their expertise and knowledge of practice, LC partners develop new approaches for examining and improving the practices of individuals and the policies of organizations.	1	2	1
15) The LC extends beyond the immediate participants.	1	1	0
16) LC participants share, learn from, and address practices and cultural differences,	1	2	1

The data in Table 1 show that while members of the learning community experienced growth, areas such as the shared vision and extending the learning community did not experience change. The creation of the vision for the group took place near the halfway point in terms of time. In the future, the creation of a

shared vision must take place at the very beginning. After its creation, this vision must be regularly revisited. Comments from the group included a desire to share this vision with the students in the classroom and to spend more time addressing the vision on an ongoing basis. Time constraints and lack of focused planning to share about the study as we were engaged in it resulted in minimal extension of the ideas of the CAR group to outside audiences during the course of the project. However, after the project's completion, several professional presentations on our learning were shared. We learned from this, as it is important to share learning with colleagues throughout the course of the CAR.

Data from the PLC instrument is displayed in Table 2. Columns for comparison include pre-test response, whole-group post-test response, average experienced educator (EE) post-test response, average preservice teacher (PT) post-test response, and change (Avg. Post-test Response minus pre-test response).

Table 2

Professional Learning Community Instrument and Data

Question	Pre-test Response	Avg. Post-test Response	Avt. EE post-test Response	Avt. PT post-test	Change
1) Participants at all levels participate democratically sharing power, authority, and decision-making.	2	2.65	2.3	3.0	.65
2) Together, the participants decide on the values and vision of the PLC.	1	2.3	2.0	2.6	1.3
3) The participants create the context in which they can focus their learning and support its implementation.	2	2.7	2.7	2.8	0.7
4) Together, the participants access resources, develop structures, and nurture people capacities supportive of a PLC.	2	2.7	2.7	2.8	1.3
5) Together, the participants develop ways to share practices to increase individual and organizational capacity.	1	2.33	2.0	2.6	1.2
6) The shared values and vision guide the participants in making individual and collective decisions on substantive issues.	1	2.2	2.0	2.4	1.3
7) Participants share visions for improvement that have an undeviating focus on improving student learning, and are consistently referenced for the participant's work.	1	2.3	2.0	2.6	0.5
8) Participants value coming together to learn ways to improve student learning consistent with the vision.	2	2.5	2.3	2.6	1.3
9) Shared values and vision guide the participants in developing physical and organizational structures and people capacities that support the PLC.	1	2.3	2.3	2.2	1.3
10) The participants value the process of peer review and feedback to improve classroom practice consistent with the vision.	2	2.2	2.0	2.4	0.2
11) All participants use their learning to inform decisions and develop actions on substantive issues.	2	2.5	2.3	2.6	0.5
12) Together, all participants engage in learning that reflects their values and contributes to realizing the vision of the PLC.	1	2.3	2.3	2.2	1.3
13) Participant's collective learning and application of the learning (taking action) create high intellectual learning tasks and solutions to address student needs.	2	2.4	2.0	2.8	0.4
14) Participant's collective learning guide members in identifying and developing organizational structures and people capacities that support the PLC.	1	2.3	2.0	2.6	1.3
15) Participant's collective learning provides a purpose and focus for peer review and feedback to improve classroom practice.	1	2.1	1.7	2.6	1.1
16) Structures and people capacities enable the participants to participate democratically in making decisions about substantive issues.	2	2.8	2.3	3.2	0.8
17) Structures and people capacities reinforce the participant's undeviating focus on student learning.	2	2.4	2.0	2.8	0.4
18) Structures and people capacities provide opportunities for all participants to learn ways to improve their collective practice.	2	2.4	2.7	2.2	0.4
19) School conditions and capacities support the participant's arrangement as a PLC.	2	2.5	2.3	2.6	0.5
20) Structures and people capacities enable the participants to review each other's classroom practice and give feedback to improve student learning.	1	1.5	1.7	1.4	0.5
21) Peer review and feedback on instructional practices increases individual and organizational capacity for whole-community decision-making.	1	1.7	1.7	1.8	0.7
22) Peer review and feedback on instructional practices reinforce the community's shared values and vision in the classroom.	1	1.8	1.7	2.0	0.8
23) Learning emerging from peer review and feedback inform the participants on areas for collective study to improve classroom practice.	1	1.7	1.7	1.8	0.7
24) Peer review and feedback strengthen professional relationships and reinforce the use of organizational structures needed for sharing practice.	1	2.0	1.7	2.4	1.0
25) Peers review and give feedback on instructional practice in order to increase individual and organizational capacity.	1	2.1	2.0	2.2	1.1

Data in Table 2 show reported change greater for preservice teachers than for experienced educators with the exception of three situations. The first is question 12, together, all participants engage in learning that reflects their values and contributes to realizing the vision of the PLC; the second is question 18, structures and people capacities provide opportunities for all participants to learn ways to improve their collective practice; the third is question 20, structures and people capacities enable the participants to review each other's classroom practice and give feedback to improve student learning. The concepts represented by each of these questions must thus be more clearly delineated, for the preservice teachers, as they are being addressed. In general, structures and people capacities would be more familiar to experienced educators than to preservice teachers. The greatest growth was exhibited by questions 5, 7, 9, and 14. These questions dealt with developing capacity and sharing vision. While it would be nice to say that this is entirely attributable to the fact that the group grew the most in these areas due to the collaborative nature of the interactions, in part this growth may be attributable to the fact that the preservice teachers were new to the meanings of some of the terms and thus rated these questions low in the pretest.

In completing their personal story, each participant reflected on the six dynamics of learning communities (collaboration, inquiry, leadership, parity, reflective dialogue, and shared vision) as they applied to both their role in the learning community and to their personal growth. Each of the six dynamics will be addressed below.

Collaboration

A goal of this learning community was to develop collaboration as distinct from cooperation. As Diez & Blackwell (2002) have noted, the motivation of the participants is a significant factor in the success of the collaboration. Each participant in this LC chose to be a part of the group. Depth of comprehension of what is involved in developing a strong collaboration can be seen in the words of Brenda, "Candid dialogue between the team members fostered new growth and knowledge. Novice and expert teachers came together to focus on innovative methods for teaching and learning." Betty adds, "We discussed in a joint and cooperative manner what we wanted to accomplish. . . . We were a team from the start that never strayed from working together to reach our goals." The point of view of the experienced educators added perspective to this. As Claudia wrote, "I felt that at the onset people were comfortable sharing their thoughts and that all participants felt that their ideas were respected. While this feeling did not completely dissipate, ..., it waxed and waned through the course of the months of the project." In George's words, "I think we learned that collaboration takes some effort. It does not occur just because we want it to happen....Collaboration is built upon a willingness to collaborate, the ability to respect each other, our various opinions, and the ability to trust each other by recognizing that each individual is there for the common good as well s their personal well being."

Inquiry

From Balach & Szymanski (2002), the definition of inquiry used in this study is, "continuous gaining of knowledge by a community of learners who

model a culture of questioning practices and who understand and appreciate the work of others, explore together to improve the academic environment, identify related issues and problems, share the body of information among partners, have consensus between principal partners about the need for data and support, and view everyone as a learner and everyone as a teacher." Joe, one of the experienced educators, wrote in his personal story, "Of course, I believe that is what inquiry is all about-- a constant struggle. We probe, we question ourselves and others, we doubt, we make attempts, we start over, but we eventually come to an understanding, a vision, and we learn. We then reflect on what was learned, begin to ask questions, and then it starts all over again!"

Leadership

In a collaborative group composed of preservice and experienced teachers, the notion of shared leadership presents inherent challenges. A realization was that shared leadership manifests itself differently depending upon the perspective of the participant. Thus, in a sense, a continuum of leadership exists. Traditionally, novice teachers have not viewed themselves as leaders; this should change. As Claudia wrote, "I think that it is important for individuals who will become new teachers to view the profession as one requiring characteristics of leadership. Teachers need to approach their job as carrying with it responsibility for what takes place in other classrooms in their building and responsibility for their own growth and development." Participation in studies such as this one plants the seed of leadership in the mind of the novice teacher.

Parity

The force of parity is present when members of the LC exhibit respect for each other as equal contributors. As was the case with leadership, the application of parity to a collaborative group consisting of individuals with tremendous variety in background presents a seeming conundrum. However, through living through months of grappling with how this comes into play, several realizations surfaced. Betty, a preservice teacher, wrote how, from her perspective, parity was attained because, "We felt comfortable agreeing and disagreeing with one another for the sake of learning and improving our teaching skills. Age and experience did not interfere with our desire and ability to grow as educators." From the point of view of George, an experienced educator, "A true learning community demands parity. . . . Setting each other at ease will take time. It does not occur because we say the words that we are all equal, with no rank. . . . Respect for each other and their opinions and ideas must be demonstrated within the group."

Reflective dialogue

The force of reflective dialogue was foundational for this group. It permeated and impinged itself upon all of the other forces. Sonia wrote that, "Reflection seems to be the driving factor between quality teaching and learning. Without the dialogue between our learning community and subgroups, I felt that this research would not of [sic] been successful." Joe, an experienced educator, wrote how, "Reflection seemed to be the norm for our group. I routinely saw that in my particular teaching situation. . . . Everyone had a lot to offer which caused

all of us to genuinely reflect on teaching and learning." However, most of the reflection occurred during meetings; once we were out of each other's sight, much of the reflection ceased. As George noted, "Now that we recognize the dynamic and have defined it, an explanation of why it is required and the value it brings to the members should be explained and discussed at the very beginning of an activity."

Shared vision

Shared vision is a force that researchers note as often being neglected in spite of occupying a spot of critical importance (DuFour & Eakin, 1999; Hord, 1997). Our group crafted a shared vision approximately halfway through the project. The shared vision we created is:

> We will establish a learning community that supports research, discussion and reflection to successfully implement the P3LC Project. We will create a new model of collaboration involving students, teachers, administrators, interns, student teachers and university members where individuals will be coteaching lessons and building on each other's enthusiasm for learning and growing. We will work collaboratively, without rank, and learn from each other.
>
> We will see computers integrated into instruction and they will feel as natural as students using a pencil and paper. There will be a sense of excitement in the room. We will see movement, energy, and thinking. We will see minds that are challenged. We will hear productive noise with high levels of enthusiasm and questions being asked by students and by teachers. We will hear people grappling with ideas, and everyone sharing ideas. We will feel the collaboration, togetherness and work toward common goals. We will see students who want to come to school, excited about learning and sensing a special enthusiasm among everyone involved. The excitement in the room will be like the anticipation of opening a gift that you already know you are going to like. We will see students actively involved in the lesson, using hands-on experimentation, manipulating materials and technology. We will see laughter, "a-ha" moments and movement throughout the

> lessons. Students will be out of their seats and doing their thing - labs, journals, or reading groups. We will hear lots of open discussions. We will be able to taste the inquisitiveness. Teachers of various skills and disciplines will be coteaching the same lesson. We will see teachers "playing off each other", collaborating to focus on the learning styles of their students and engaging them in learning. We will hear teachers and students discussing their learning with each other in an enthusiastic tone. Teachers will feel like they have someone with whom to share the workload.
>
> We will hear people referring to this vision and see it growing and changing on an ongoing basis. We will contribute to the improvement of teaching and learning and influence others to conduct similar projects.

This vision never quite developed a life of its own. While, in this instance, this was a loss, in terms of setting a stage of awareness for the participants of the importance and pre-eminent role that shared vision must play, this omission provided a memorable learning experience. Sandy, a preservice teacher wrote the following about the visioning process: "I felt like it was a cool thing to do and be part of but I definitely did not follow through and in retrospect wish I had. . . . I think we all have good intentions and all want the best for our students yet I know for myself that I need more experience coming up with and following collaborative vision statements before I feel comfortable using them frequently." Claudia writes, "I would improve on this by addressing the concept of a shared vision from day one. . . . I am glad that I have realized this so early. . . . now that I am aware of it I will augment its importance and salience from early on." Though the shared vision did not gain momentum, it did have an impact. Joe shared how, "Verbalizing our thoughts throughout was a significant part of gaining a shared vision for this project." George, who brings a wealth of experience with

vision writing and is a national expert in strategic planning, concurs in saying that, "We had a great amount of excellent ideas and were well on our way toward creating an influential vision statement that defined collaboration, inquiry, leadership and parity. I believe the members wanted this activity to redefine teaching and develop into a new standard to which all teachers should aspire."

Discussion

Many forward strides were made by all of the participants in this CAR study. Notable advances include development of dialogic skills, a shared understanding of how teachers must lead a life of the mind, and realization of how to create a context supportive of change. Each of these developments will be addressed below.

The preservice teacher participants in this study entered the endeavor accustomed more to discussion than to dialogue. The idea of everyone listening to each other and suspending judgment throughout came as a surprise to them. The dialogues that took place during our meetings were conversations following along the thinking of Freisen (1993), in that the literal definition of conversation is "to dwell with," and that it suggests (p. 37) "reciprocity rather than expert prescription." Another trend of our conversations was that they would follow along different paths than may have originally been intended. As Freisen says, (1993, p. 33), "A genuine conversation is never the one that we wanted to conduct." The collaboration action research group did not constrict its conversations.

Frequently teachers, and in particular novice teachers, become bogged down by day-to-day minutia rather than viewing their profession through the lens of their intellect. Through the course of this study, the preservice teachers developed their intellectual capacities. While an obvious means by which this took place were the reflections that each completed, a deeper sense of this aspect of the teaching profession was able to be developed in these individuals through having the opportunity to sit for two or three hours and discuss teaching. This typically does not take place because teachers' schedules do not contain two to three hour stretches within which pedagogy can be discussed.

A realization of how to create a context supportive of change took place at different levels for the different participants in this study. The preservice teachers become aware of the fact that teachers should play a role in school reform beyond the four walls of their classroom. The assistant superintendent experienced working with a group of individuals in a novel context; this experience left him amazed and changed. The university professor had the opportunity to work with preservice teachers in a K-12 setting and to thus put into practice what he had been reading and thinking about for the undergraduate education curriculum. The inservice teacher had the chance to put into practice ideas that she found exciting but that she had never had the chance to experience.

Conclusion

In conclusion, a CAR group is a professional learning community. Therefore, the dynamics of collaboration, inquiry, leadership, parity, reflective

dialogue, and shared vision shape the progression of the group. While this is a fluid process, initial conditions can be established that predispose the development of the group into a strong learning community. Through the process of enacting and studying such a project, the authors have begun building a foundation that relates theory with practice for the professional learning communities created through collaborative action research. Future study includes exploring the learning community construct in an action research study of a university graduate administration class, studying the growth of the learning communities created by constituent groups (for example, university faculty members and principals) as they conduct action research in a professional development school partnership, and investigating the political ramifications of learning communities.

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